VOL. IV. NO. 169.

GARDEN AND FOREST

A JOURNAL OF HORTICULTURE LANDSCAPE ART AND FORESTRY

MAY 20 1891

PRICE TEN CENTS.] Copyright, 1891, by THE GARDEN AND FOREST PUBLISHING COMPANY. [$4.00 A YEAR, IN ADVANCE.

HARDY PLANTS.

Rhododendrons, Japanese Maples, Hardy Azaleas, Rare Trees and Shrubs. The finest and most complete stock in America. The finest Catalogue in the world is sent for 25 cts., which is allowed on first order.

B.A. ELLIOTT COMPANY, Pittsburgh, Pa.

Ornamental Trees

SHRUBS AND CONIFERS.

Finest collection in New England. Includes the best novelties. 90-page catalogue full of good hints.

LARGE AND SMALL FRUITS.

Proved for New England climate. 28-page catalogue with culture.

HARDY BORDER PLANTS.

Finest collection in America. 60-page catalogue. Over 800 varieties described. The most complete on the subject in America. The above are "Three Valuable Handbooks." All plants can be seen at the Nursery, which was established in 1854.

JACOB W. MANNING,

THE READING NURSERY, Reading, Mass.

All Catalogues Free.

ENGLISH, FRENCH AND GERMAN

RIDING SADDLES

Bridles, Stirrups, Bits, Spurs, Whips,

And Equestrian Goods generally.

Makers of the Celebrated **Whitman Saddles** (Ladies' and Gentlemen's). Illustrated Catalogue free.

WHITMAN SADDLE CO., 118 Chambers St.

NEW YORK CITY.

SILVER MEDAL

AWARDED TO

Rea Brothers,

NORWOOD, MASS.,

By MASSACHUSETTS HORTICULTURAL SOCIETY, May 9th, 1891, for

Spirea Japonica grandiflora

(NEW) and

SPIREA ASTILBOIDES.

The only stock in the country. Sample flowers on application. Correspondence solicited.

☞ Catalogue of Hardy Plants free.

NEW AND RARE WATER-LILIES

CHOICEST IN CULTIVATION.

Nelumbiums (Egyptian Lotus). Nymphæas. The famous Pink Pond Lily. The best White and Yellow Hardy Varieties. N. Zanzibarensis (Blue and Red. African Lilies). N. Devoniensis (Light Crimson). N. Dentata (Large White). Send for Price List.

W. TRICKER, Dongan Hills, N.Y.

JOHN DE WOLF,

Landscape Architect and Gardener.

Consultations and visits to Country Places at reasonable rates.

53 Lafayette Place, New York.

TREES

AND SHRUBS.

Many choice Novelties and all the Standard Varieties. A large and reliable stock of superior quality. Send for Catalogue.

WM. C. STRONG,

WABAN, MASS.

REID'S SMALL FRUITS, TREES, VINES, SEEDS, ORNAMENTALS,

CRATES and BASKETS. Everything for the fruit grower. Prices Low. Estimates Free. You save one half by seeing our list. *NEW FRUITS a specialty.*

Illustrated Catalogue *FREE.* **E. W. REID, Bridgeport, Ohio.**

ORCHIDS

The finest stock in the world.

Nearly five acres devoted to their culture.

SANDER'S, ST. ALBANS, ENGLAND.

Thirty minutes from London.

A. DIMMOCK, Agent, 205 Greenwich St., New York City.

$6,500 IN PREMIUMS $6,500

GRAND

Chrysanthemum Show and Horticultural Bazaar,

Including a Monster Exhibit of Boilers, Greenhouses, Seeds, Bulbs, Plants and all articles appertaining to the art. To be held at

Madison Square Garden, New York, November 2d to 8th.

For premium lists and space, address

J. W. MORRISSEY, Secretary, Madison Square Garden, New York.

Boys "play Indian" oftener than the needs of your Lawn require. One hour on the "war-path" will ruin the Lawn which should have been beautified and protected by a

"Hartman" Steel Picket Fence.

We sell more Lawn Fencing than all other manufacturers combined, because it is the **Handsomest** and **Best Fence** made, and **cheaper than wood.**

Our "Steel Picket" Gates, Tree and Flower Guards and Flexible Steel Wire Door Mats are unequaled. A 40-page illustrated catalogue of "**Hartman Specialties**" mailed free. Mention this paper.

HARTMAN M'F'G CO.,

WORKS: BEAVER FALLS, PA.

BRANCHES: 102 Chambers Street, New York; 508 State Street, Chicago; 73 S. Forsythe Street, Atlanta; 1416 West Eleventh St., Kansas City.

TIMELY BOOKS.

Landscape Gardening. By SAMUEL PARSONS, Jr., Superintendent of Parks, New York City. Notes and Suggestions on Lawns and Lawn-Planting, Laying Out and Arrangement of Country-Places, Large and Small Parks, Cemetery Plots, and Railway-Station Lawns; Deciduous and Evergreen Trees and Shrubs, The Hardy Border, Bedding Plants, Rockwork, etc., etc. Large 8vo, with nearly 200 illustrations, $3.50. (*Ready June 1st.*)

The Garden. As considered in literature by certain polite writers. With a critical essay by Walter Howe. With portrait of William Kent. (No. XXVI in the Knickerbocker Nuggets Series.) $1.00.

"A book that will especially delight all who are fond of gardens and gardening, and who take a certain pleasure in enjoying nature when treated by man as a work of art."—*Boston Home Journal.*

Among the Moths and Butterflies. By JULIA P. BALLARD, author of 'Building Stories,' 'Seven Years from To-Night,' etc. Second edition, 8vo, cloth, $1.50.

"The book is one of abounding and abiding interest, both in its matter and in its literary manner. It is copiously and exquisitely illustrated, and though obviously written for the entertainment and instruction of youth, is attractive to young and old alike."—*Boston Gazette.*

The Trees of Northeastern America. Second Edition. By CHAS. S. NEWHALL. With an Introductory Note by Nath. L. Britton, E.M., Ph.D., of Columbia College. With illustrations made from tracings of the leaves of the various trees. 8vo, cloth extra, $2.50.

"The book is a mine of information relating to the commercial advantages of the different woods. Clear in arrangement, lucid in description, faultless and scientific in illustration, excellently and legibly printed and indexed, it is a work which will be welcome in the office of the merchant, the atelier of the artist, and the library of the country gentleman."—*Outing.*

*** List of Spring Publications and Prospectus of the Knickerbocker Nuggets Series sent on application.

C. P. PUTNAM'S SONS,

27 & 29 West 23d St., New York.

Readers of GARDEN AND FOREST are requested to mention that paper in corresponding with advertisers.

HARDY, RARE SHRUBS FOR EASTERN GARDENS.

Japan Maples in 20 choice sorts.
Jap. Magnolias, Stellata, Parviflora, etc.
Novelties in Trees and Herbaceous Plants.
Jap. Pæonies, in magnificent coloring.
Jap. & Calif. Seeds and Bulbs in grand variety.
Miniature Jap. Orange Trees in fruit.
Rare Conifers, Bamboo, etc.

Safe arrival by Freight, Express or Rail guaranteed. Send for Catalogue.

H. H. BERGER & CO., San Francisco, Cal.

P. O. Box 1501.

HARDY PLANTS.

Descriptive Catalogue of 100 pages will be mailed to all applicants. Hollyhocks, Iris, Pæonies, etc., together with many NEW SORTS not before offered.

H. MEYERS,

Lock Drawer E,—Late Woolson & Co.—Passaic, N. J.

Flower Pots.

We give special attention to private trade, and keep always on hand a large and selected stock of perfectly made Pots, as follows:

Hand-made, old pattern, from 4-inch to 24-inch inclusive.
Machine-made, from 2-inch to 4½-inch, old pattern, straight sides.
"Standards," from 1¾-inch to 12-inch inclusive.

Distance should not prevent private trade from using the best Pots that are manufactured, as freights are very low and breakage nominal. Correspondence solicited.

A. H. HEWS & CO.,

North Cambridge, Mass.

THE United States Mutual **ACCIDENT** Association

by its justice and liberality has won such a degree of popularity that it is to-day the largest organization furnishing Accident Insurance.

$100,000 Emergency Fund.

$5,000 Full Indemnity Preferred Policy costs $15.00 per year.

320, 322 & 324 Broadway.

CHARLES B. PEET, President.

JAMES R. PITCHER, Sec'y and Gen'l Manager.

GOLD MEDAL, PARIS, 1878.

W. BAKER & CO.'S

Breakfast Cocoa

from which the excess of oil has been removed,

Is absolutely pure and it is soluble.

No Chemicals

are used in its preparation. It has *more than three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, EASILY DIGESTED, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

The Great English Complexion SOAP.

PEARS' SOAP.

Of all Druggists, but beware of imitations.

UNITED STATES NURSERIES.

CHRYSANTHEMUMS.

Fine healthy stock of all the finest varieties now ready for delivery. Send your orders in early, or write for Catalogue.

Respectfully,

PITCHER & MANDA.

CORRESPONDENCE SOLICITED.

Will REMOVE May 1st to more commodious quarters, at 20 COLLEGE PLACE, corner of Park Place.

Garden and Forest.

Among the contents of next week's issue (No. 170) will be the following articles:

The White Swamp Oak. (Illustrated.)
Editorial.

The Supply of Western Arbor-vitæ.

Ivy in an Old French Garden.

Native Shrubs of California.—V.
By PROFESSOR EDWARD L. GREENE.

The paper will contain an illustration of a young Swamp White Oak in winter, from a photograph, and an illustration of an Oak Scale.

GARDEN AND FOREST.

PUBLISHED WEEKLY BY

THE GARDEN AND FOREST PUBLISHING CO.

OFFICE: TRIBUNE BUILDING, NEW YORK.

Conducted by . . . . . Professor C. S. SARGENT.

ENTERED AS SECOND-CLASS MATTER AT THE POST OFFICE AT NEW YORK, N. Y.

NEW YORK, WEDNESDAY, MAY 20, 1891.

TABLE OF CONTENTS.

PAGE.

EDITORIAL ARTICLES:—The Report of the Secretary of Agriculture 229
Forest-fires in the United States 230
Do Americans Love Flowers? 230
A California Rose-bush. (With figure.) 231
How We Renewed an Old Place.—VI. ..... *Mrs. J. H. Robbins.* 231
Winter Studies of the Pine Barren Flora of Lake Michigan.—IV. *E. J. Hill.* 232
NEW OR LITTLE KNOWN PLANTS:—Clematis connata. (With figure.) ..... *C. S. S.* 234
CULTURAL DEPARTMENT:—Cinerarias 234
Odontoglossum coronarium and O. brevifolium ..... *J. Weathers.* 234
Æschynanthus ..... *James P. Taplin.* 236
Dahlias 236
Hardy Narcissus ..... *E. O. Orpet.* 236
Scilla hyacinthoides, Trollius Europæus, Aquilegia flabellata ..... *J. N. G.* 237
Begonia semperflorens, The Satsuma Orange, Celery-plants, *Professor W. F. Massey.* 237
THE FOREST:—Redwood Timber ..... *Carl Purdy* 237
CORRESPONDENCE:—Wild Asparagus ..... *E. Lewis Sturtevant.* 238
Water in "Pot-holes" ..... *H. B. Ayres.* 238
Watering Trees ..... *E. L.* 238
On the Names of Some North American Trees ..... *George B. Sudworth.* 239
RECENT PUBLICATIONS 239
NOTES 240
ILLUSTRATIONS:—A California Rose-bush, Fig. 41 233
Clematis connata, Fig. 42 235

The Report of the Secretary of Agriculture.

IF the agricultural industries of the country are to yield a greater profit in the future, it will be mainly because the work in our farms and gardens, orchards and vineyards, is conducted with greater skill and intelligence. If, then, Government is to give any assistance to agriculture, the best aid it can render is to give information which will help farmers and gardeners to decide correctly the questions which confront them in their daily practice. Of course, Government may give direct aid in other directions, as, for example, it may introduce new varieties of economic plants, or it may help in the battle with destructive insects, as it did recently by importing from Australia the parasite which has done so much to save the Orange-groves of southern California from the devastation of the pernicious scale insect. But, after all, the most effective work of the Government for agriculture must be educational. In the first place, then, the Government must gather knowledge in order to disseminate it. Either under the direct supervision of the department or under the various experiment stations which are now vitally connected with it, a corps of skilled workers must be employed to make such tests in various directions as farmers are unable to make for themselves. Many of these experiments are necessarily expensive, and can hardly be undertaken by private persons. Many more of them require such habits of investigation and comparison as only men of long scientific training are able to accomplish. Others, again, require a long series of years before any satisfactory results are arrived at, and such tests can only be entrusted to institutions with a continued life and a well-directed purpose. It is worth while, therefore, to examine the report of the Secretary of Agriculture, which has just been published, in order to form some judgment of the extent and quality of the work of his department.

It will be observed at once that this publication is far in advance of the reports of a generation ago, over which the newspapers used to make merry. Even in that early day these volumes contained much that was of profound and permanent value, although this matter was usually smothered under a mass of crude and ill-digested facts and fancies. In the main, however, these public documents deserved much of the contempt with which they were treated, and the current report certainly shows in a very marked way an improvement in scope and method. In the first place it should be remarked that this report is a very small part of the publications of the department during the year. A very interesting chapter of the book contains a summary of the publications of the department, and the list for the year covers five pages. These publications vary in size from bulletins of a few pages to bulky volumes. Many of these are monographs by men who are recognized as authorities in various fields of scientific study. We have just received, for example, a Report of the Entomological Commission on Insects Injurious to Forest and Shade Trees, which has been prepared by Dr. A. S. Packard. Our students of entomology have naturally been led to concentrate their studies upon garden and field-insects rather than upon forest-insects. This treatise, however, a revised and enlarged edition of an earlier bulletin, makes up a volume of nearly a thousand amply illustrated pages, and not only gives a careful account, so far as is possible, of the insects which attack various forest and ornamental trees, but describes the diseases which they cause, and gives directions for using the remedies and the various means of applying these remedies to shade and forest-trees. Among other publications of merit may be named Dr. Vasey's Catalogue of Agricultural Grasses and Forage Plants; Professor Wiley's treatise on the Beet Sugar Industry; Mr. Tratman's Forestry Bulletin on the Substitution of Metal for Wood in Railroad Ties; Dr. Merriam's contributions to the Study of the North American Fauna. In fact, all the divisions of the department have issued books or bulletins which have scientific and practical value.

One of the most interesting of the reports of the divisions, which are published in connection with the Secretary's report, is that of Professor Atwater, the Director of the Office of Experiment Stations, an office which has been established now for a little more than two years. This is interesting, not because it records any marked discoveries in science or improvement in practice, but because it promises in time to be very efficient among the agencies of the department. The experiment stations as yet have not given any adequate return for the large amount of money they cost. In the first place, it is difficult to find trained experimenters to conduct the station work, and, again, their work is not sufficiently specialized, but is spread over too much ground. Besides this, the Boards of Control are under constant pressure to show results, so that abstract research is neglected for superficial work, which makes some immediate show of practical use. However, it seems probable that these and the other causes of failure will be gradually eliminated under intelligent discussion. Ambitious and able young men graduating from the schools of this country and of Europe are ready to take occupation in the stations, so that, with a central bureau, which, in some measure, may unify and collate the work in the various states, we are justified in hoping for such efficient aid in the practice of the arts of agriculture and horticulture as can be furnished by a more thorough understanding of the sciences upon which these arts rest. The bulletins from this office have so far been judiciously compiled and edited, and their distribution must in time make a sensible increase in the popular knowledge.

Of some of the other special reports, like that from the Division of Forestry, we shall take occasion to speak hereafter; but the work in the Divisions of Chemistry, of Botany, of Vegetable Pathology and Statistics is shown to be worthy of respect, and the chiefs of these departments hold an honorable position in the republic of science. The Secretary's summary of the year's work is in the main judicious,

and altogether it would seem that even in fields which require specific training, popular opinion can be trusted at last to pronounce judgment upon the efficiency of our public servants and upon the quality of their work. The abuses in the matter of seed-distribution are being gradually cured, and we may hope that this bureau will finally be restricted to its only legitimate purpose; that is, of making a careful trial by means of skilled agents in various parts of the country, of new seeds and plants which promise to be of economic value.

We can see no reason why there should be a Secretary of Agriculture, with a seat in the Cabinet, whose position is essentially political, and who must of necessity be changed with every changing administration. The practical control of the educational machinery of the department, at least, ought to be invested in some officer whose standing as a man of science is universally recognized. The position of this man should be certainly as permanent as that of the Director of the Coast Survey. He should be able to make plans for work that will extend through more than one administration. But, after all, when we consider how much time and experience is necessary to organize a force of skilled workers in various branches of scientific inquiry, and how difficult it is in Washington to select men on any other principle than that of political availability, we ought not to complain of the progress that has been made, but rather to feel encouraged to hope that the work of the department will improve in quality as the years roll on.

It is now ten years since a bulletin of the Tenth Census set forth the fact that fires had swept over more than 10,000,000 acres of forest in the United States, and destroyed more than $25,000,000 worth of property in a single year. The publication of these startling figures caused wide discussion. The people of the country were generally informed through the press that even this enormous destruction was only a portion of the actual loss, for, in addition to the annihilation of so much forest wealth, the ruin of millions of seedling trees should be counted, besides the actual burning up of the soil or its deterioration in those qualities which make forests possible—that is, these annual fires not only destroy the standing timber, but they destroy the hope of timber in the future. Since the publication of this bulletin, forestry associations in various states and scientific societies have been passing resolutions on this subject and presenting their views to various legislative bodies, state and national, and yet in the first half of this month forest-fires were raging unchecked in half a dozen states, and the devastation has been unusually widespread. In most cases they have burned themselves out, or have been stopped by timely rains; very rarely has any human agency prevailed to arrest their progress. The fact is, that after a drought in the early spring, especially in a forest where loggers have been at work and have left the ground covered with dry branches, a fire once under good headway is practically uncontrollable. In Europe there is no longer any serious danger from these fires, because every one hastens to smother them as soon as they are started, and in this country the only way to prevent this wholesale devastation by flame is by an organized effort to arrest the fire as soon as it is kindled.

Of course, every state needs a special law relating to these fires, but even where it is made a crime to set fire to any woods or underbrush, either through malice or negligence, conviction is rare. For the same reason a forest-police can hardly be trusted as a protective agency until the whole community has an intelligent interest in forests. No law can be effectively enforced unless it has behind it a strong public opinion, and the fact that thousands of acres of Pine-lands have been recently on fire within a few miles of cities like New York and Philadelphia is a proof that there is no genuine popular appreciation of their value. Men who live on clearings in the forest, or on lands adjoining forests, will fire brush-heaps in the spring, especially when it is dry, although they know the flames will sweep over miles of wood-land. To them and to the public generally a forest has no value—it is waste-land, the prey of every trespasser. So long as forest-property is held in so little esteem our existing forests will have no adequate protection, and there will be small encouragement to plant new ones.

Do Americans Love Flowers?

The *Illustrated American*, as quoted by *Science*, maintains that Americans do not love flowers, because they are used, among the rich and fashionable, in reckless profusion for display rather than enjoyment. It is also claimed in *Science* that we are not a flower-loving people, because we accept botanical appellations for our indigenous plants, instead of giving them simple, homely names like the charming ones with which familiar flowers have been christened in older countries.

To this it may be answered, that what ostentatious dwellers in towns are guilty of is by no means to be accepted as a national trait. The place to study the characteristics of a people is not among the very rich, but among those in moderate circumstances, who make up the bulk of the inhabitants.

Any one who has driven through New England or the older middle states cannot doubt that there, at least, the people truly love their gardens, and the house plants, with which their windows, in winter, are stocked. Even the humblest dwelling has its row of flower pots, or tin cans, well filled with slips of Geranium or other bright flowers; and the hours spent over their gardens, by gentlewomen who cannot afford a gardener, are the best proof that the affection they have for them is a real and ardent one. We have known many a house mother, burdened with domestic cares, to rise before day to snatch an hour for weeding or watering her little border, that its fragrant contents might be of avail for a friendly gift, or an adornment for her own table. It is the rarest thing, in a New England village, to enter a room in summer and find no flowers disposed about it; and in the winter the eager question, "How are your plants prospering?" often comes before the conventional inquiries after the health of the members of the household. Their new varieties are discussed and exchanged; there are rare Chrysanthemums to talk about in autumn, and choice tulips and hyacinths to be complimented in the spring, and each one knows what her neighbor's garden is most famous for, and who is the most successful in her general management of her pets.

Many women are experienced botanists in their own locality, and can tell where every wild flower of the region is to be found. They rejoice, too, in the discovery of a new weed with as much enthusiasm as an astronomer shows over a fresh comet. Most of the men who live in the country are too busy to give much time to flower-gardens, but they show great interest and pride in those so carefully tended by their wives and daughters, and are ready enough to lend a helping hand, even though they may pretend to begrudge the space taken from grass or vegetables for what they think it their duty to call an idle diversion. But given a retired merchant, with not much to occupy his mind, and the chances are that he will soon be wearing himself out in loving labor among his Rhododendrons and Roses, taking pride in having the earliest and largest blossoms in his parterre, and conferring in a friendly way over the fence with his neighbors, who stop to consult with him on the best way of dealing with insect pests. Of course, in the remoter west, life is too strenuous to leave much space for flower-gardening. But we have seen flowers growing in a little enclosure on a frontier sheep-ranch, which had cost not only labor but self-denial, and yet they were hardly seen once a year by any save their owner. The care which it cost the mothers and daughters among the early emigrants to transport seeds and slips and roots of the old home flowers from New England to brighten new homes in the west has often been described, and the love with which these flowers are cherished by their descendants is well known.

It is to these people we must look to discover whether the love of flowers and gardening is implanted in a people, not to the wasteful and luxurious dweller in the town, who only uses flowers as a pretext for wanton expense. And it should not be forgotten that aside from this extravagance, which may show itself in the purchase of flowers, as in the purchase of other luxuries, simply because they may be rare and costly, the great body of common-sense people in the city buy flowers habitually because they love their beauty and fragrance.

As to the nomenclature there is this to be said: In older countries the people and the flowers lived together long before the botanist appeared, while here the botanists came with the early settlers to an unexplored field, found the new flowers, and named them before the people had become familiarly acquainted with them. The state flower of California has been introduced to the children of that commonwealth as the Eschscholtzia before they could spell it, but this does not prove any lack of love or admiration for it on their part. They have a pet name for the flower, too; and in all the older settled parts of the country wherever a plant or flower is so abundant or useful or obtrusive that there is need to speak of it a name is found at once. The children of New England call the wild Columbine, Meeting-houses, from their shape, no doubt, and with them *Viola pedata* is the Horse Violet, perhaps from its long face. The Houstonia, which is Bluets in some places, is Innocence in others. In northern New Jersey, the Marsh Marigold of other regions (*Caltha palustris*) is invariably a Cowslip. Last week children were gathering Dog-tooth Violets by the handful within sight of Trinity Church spire, and when asked the name of the flowers they expressed much surprise that the inquirer had never heard of Yellow-bells. Even Shortia, which hid away from botanists for a hundred years, had a name which was common enough to answer every purpose, and the man who first discovered it in any quantity was told by the dwellers in the mountain hamlet, where it was spreading over acres, that it was nothing but Little Colt's-foot. Even where botanical names have not been adopted outright as common ones, they have often been changed, just as Pyxidanthera has become Pyxie to all the dwellers among the New Jersey Pines. There are plenty of common names in every locality which have never found their way into the botanies.

American women wear flowers for adornment more generally than the women of any other country. This of itself is proof of the genuineness of their love for flowers. It is absurd to imagine that a custom so universal is based on any sham or passing fashion. The desire for display is prevalent enough, beyond question, but if any one doubts whether the admiration for flowers is an acquired taste—because it is fashionable to wear them—let him carry a handful of them through a city street among groups of children, where unsophisticated nature will find expression. The keen delight of these little ones, who will always accept such a gift, shows that the affection for flowers is an original instinct, which is as strong in this country as it is anywhere. Fashionable freaks and follies pass away, and flowers would have their brief day like any other craze if the regard for them was artificial or fictitious. The flower-dealers of the country need have no apprehension as to the future of their industry. It is based on one of the elementary wants of our nature. Flowers will be loved until the constitution of the human mind is radically changed.

A California Rose-bush.

THE illustration which appears on page 233 will convey to those of our readers who are unfamiliar with southern California a better idea of the possibilities of horticulture in that favored region than any description of a California garden could give. It is made from a photograph of the cottage occupied by Mrs. S. C. Barclay, in Los Angeles. The Rose-bush, which covers the front of the cottage, is only twelve years old, and its size and vigor show what rose-growing may become in California in the hands of an intelligent and careful cultivator. This particular plant is the old-fashioned Noisette Rose, Lamarque, a variety which thirty or forty years ago was the most popular greenhouse climbing plant in our northern states, and which is still occasionally found in old-fashioned gardens, both at the north and in the south.

The Lamarque is a rampant grower, with abundant handsome foliage, and in early spring produces a great crop of large clusters of double, white or slightly yellow, fragrant flowers. There are not many double Roses that are more beautiful, and not many plants that are more prolific, and the Lamarque, like several other old-fashioned and now neglected Roses, might be well restored to popular favor. The fact that it produces only one full crop of flowers in the year is one reason, no doubt, why it has had to give way to plants which flower with more or less regularity every month. None of the newer Roses, however, grow so vigorously or are more reliable, and to cover the rafters of a large conservatory at the north or to climb through the trees or over the verandas of a southern garden, no Rose which has yet been produced surpasses or quite equals this old-fashioned favorite.

How We Renewed an Old Place.

VI.—THE WRECK OF AN ANCIENT GARDEN.

WHEN the Swiss Family Robinson went ashore on their desert island they found all they needed to make them comfortable, on the wreck, from which, luckily, they were able to help themselves before the old hulk went to pieces. After that, every little thing which was quite indispensable came out of a wonderful bag that belonged to the worthy mother.

Since we landed upon the barren waste of this abandoned farm we have often had reason to compare the old house-lot with the ship, and the front yard with the mother's bag, for a number of trees and shrubs have been forthcoming from the one, while the other has proved an inexhaustible resource, not only for our own, but other people's gardens.

For, once upon a time, in the old house which is now no more, there dwelt two dear old ladies who took great pride in their garden, and stocked it well with all the best flowers of their day, and from it came bulbs and cuttings of roses, and roots of perennials, that still help to make beautiful the ancient gardens of this fine old town. They were women of refinement and learning, much respected and beloved, and the older people still warmly recall Miss Peggy and Miss Betsy, and the days when the old house was always a sunny and cheerful resort. After the place was abandoned and unoccupied for many years, people felt at liberty to come and help themselves to slips of the shrubs and to roots of the old plants, so that one might hardly hope to find anything of value still existing there; but when we came to clear away the rubbish, we were surprised to find what a tenacious hold the occupants had of the soil, so that, as the spring and summer months sped by, we were constantly surprised and charmed to find, in unexpected places, some shrub or flower that clung to its old haunts, and, half-hidden from the eye, bloomed away its sweet life heedless of observers.

Along an uneven old wall that had supported the terrace of the house, I had a bed dug, into which I transplanted such bulbs and roots as would consent to be torn from their original homes. This bed I call Miss Betsy's Garden, for I am quite sure that in old times that gentle soul must have watched and tended her favorites by this same sunny wall. There is one prim little Columbine which wears a minutely fluted lavender cap that I associate with her, and always call by her name. The flowers that come up in Miss Betsy's Garden are all simple and homely, but to me their quaint familiar faces are more appealing than the far showier and splendid blooms of to-day.

They must have family records of interest, these lady-like old blossoms. Those yellow Daffodils, with their long green ribbons, have nestled up against that wall till, no doubt, they regard it as an ancient castle, of which they are the chatelaines; and I am sure that dignified Narcissus must have a history. There is a sweet June Honeysuckle straggling there which breathes an old-time fragrance, and the tiny petals of the pale pink Bridal Rose which flutters beside it have the very tint of soft color one sees in the cheek of an ancient maiden. A wild Clematis seems to grow out of the wall itself. I have never been able to find its root, and every fall a Prince's Feather waves its tall plume where once it danced with a Lady's-slipper. The Pansies have all degenerated into Lady's Delights, and the Hollyhocks come up single, but here they grow and blossom beside a pendulous Forsythia, the seed of which was, no doubt, sown by some passing bird, for it is not, I think, one of the older shrubs in this village.

The rest of the garden is perfectly formless and wild. Nothing has been done to the old part of the farm, except to clean away the weeds and sticks that encumbered it, and the old plants have grown lank and tall along the fence and under the heavy shade of the trees. But here in the spring the ground is blue and fragrant with hardy English Violets that fill the air with perfume and blossom long before even the native White Violet, which leads the way among our New England flowers; and wherever you walk you come upon a Tulip, or a Star of Bethlehem, or a feeble Crocus choked by the strong grasses, and other Daffys are wagging their golden heads in sheltered spots, and later there are to be seen more sculpturesque Narcissus shining whitely under the shrubbery, "like good deeds in a naughty world." The Flowering Almond sends up spikes of bloom; the Periwinkle, white and blue, hides among its shining leaves, while the Moneywort has strayed away from the garden and made of itself a nuisance in the orchard, where it threatens to root out everything else. There also are great clumps of the giant Solomon's Seal in shady nooks, where they grow to wondrous size.

There are Lilacs, purple, white and Persian, in profusion, and the Mock Orange and Spiræas, all have their turn as the seasons go round. One White Lilac has shot up to the height of a two-story house, and now that the windows are no longer there to help one to gather them, it shows, when in bloom, a crown of inaccessible blossoms; others yield their wealth of flowers nearer at hand, and by the well, a Persian Lilac drops like a fountain with rosy jets.

No longer supported by the fallen house, a Trumpet Creeper, which trailed along the ground, has been clipped into a compact bush. A venerable Althæa, which we did our best to save, blossomed feebly for a season or two and then perished, deprived of the accustomed shelter of the porch, but great bushes of the old-fashioned White Rose abound, and there, too, is the sweet Blush Rose, beloved of the bee and the sturdy Hessian. A large Damask Rose still flourishes under the Lilacs, and a luxuriant Baltimore Belle climbs in reckless profusion over its confining wires. Where the fence stood is a low cluster of bushes covered in summer with a bold Red Rose, single and splendid, the remote parent, perhaps, of the Jacqueminot; they call it here the Russian Rose, but I do not know what its real name may be; and down in the orchard I found a bush of the dear, thorny, little Scotch Rose, the smell of which is laden, as is no other, with the memories of childhood.

There are clumps of Tiger Lilies and old-fashioned small Bluebells and Sweet Williams, and a Barberry-bush swings its yellow blossoms and red berries over the rear wall, and under the Box-arbor I found Spiderwort growing in great clusters.

One day, while strolling down along the orchard fence, a familiar odor, heavy and sweet, led me on to where a wild Azalea was hanging out its fragrant blossoms. I do not see why a hedge of these might not do well in this moist soil. I hailed this one with delight as a fine ornament to the place.

But what we like best is the fine old Box arbor, which has grown up from a garden border until its stout trees are now six inches in diameter, and nearly ten feet high, which shows their great age. They were fair-sized bushes when old men of this town were boys, and to make even a bush of a Box-plant is slow work. Here, shaded by a young Elm which has sprung up in the kindly shelter of these twisted old trunks, we sit and look out upon the meadow and the growing plants, and feel linked with the past by this memento of those who loved this garden spot, and toiled to make it fair and fruitful, even as we, too, toil to restore its beauty and productiveness.

Hingham, Mass. *M. C. Robbins.*

Winter Studies of the Pine Barren Flora of Lake Michigan.—IV.

In peat swamps, and also in wet sands, the Pitcher Plant (*Sarracenia purpurea*) may be studied. The leaves are mostly purple or wine-colored, striped sometimes with brighter lines. A nest of these leaves, resting on the Sphagnum, or among Cranberry-vines, is an attractive sight, aside from the interest which their singular form excites. Every curve and swelling of the vasiform leaf and of the hood is perfect, in harmony with the flowing lines of beauty, and the eye lingers on a beautiful shape. In winter they are mostly filled to the brim with water or with ice. When the latter is the case, by removing the integument a complete model of the cavity is obtained in ice. The water is limpid and the ice clear, except at the bottom of the cavity where objects that have fallen in have settled. The repeated freezing and thawing to which the pitchers are subjected by change of temperature does not harm them, for the tissues are not torn, and they are ready to resume their function of catching insects in the spring, and continue till the plant is supplied with a new growth of leaves.

The nest-like clumps of the Prickly Pears (*Opuntia Rafinesquii*) are very different in appearance and habitat, finding a congenial soil in the dry sands where they grow abundantly. The mixed character of our flora is well displayed by this and the Pitcher Plant, for the latter may be seen in the wet sand, and a few feet away the Prickly Pears and the Bearberry may be found growing. As the only representative of the Cactus family it is an object of special interest to the student of this flora. The winter aspect of the plants will at once be noticed. During the warm weather the joints of the stem are green and plump, and the skin quite smooth, except on some of the oldest, and the stems are somewhat ascending, and some of the joints upright; in the cold season, though retaining their green color, they are much wrinkled, the skin wavy, and the joints are limp, lying flat upon the ground as if to expose as little of their surface as possible. The stiff tissues have become very pliable, and the stems, if lifted up, fall back like a weak or lifeless body. When partly buried in sand, or covered with dead leaves, which their irregular shape and spines well adapt them to catch and hold, they retain more of their summer habits and position. Their spines are sometimes rather formidable, though not present on all plants, or so greatly developed, except upon a few, where they become an inch to an inch and a half long, and stout in proportion.

Several of the herbaceous plants have not lost all their seeds, though the stems are dead. The cottony heads of Anemones, especially those of *Anemone cylindrica*, attract attention. They are swollen to an oblong bunch by reason of the loosened akenes, and the down is rusty-looking. The faded stems abide stiffly in their places, and contribute their part in giving variety to the scene. The pale pappus of the Golden-rods and Asters, and the hairy spikes of the Beard-grass (Ardropogon), still remain in quantities sufficient to remind one of the spots where they were common in summer; and when the ground is mantled with snow, and flocks of snow-birds and snow-buntings appear, such plants as these, rising above it, are a welcome source of food to these birds, lighting on the stalks to gather the seeds or skipping over the surface of the snow to pick up those which have been scattered by the wind.

Those interested in Mosses and Lichens will find many of these forms of plant-life in as good a state to investigate as in the summer. Dr. Henry Muehlenberg, a careful and diligent botanist in the days of firesides and back-logs, resorted to his wood pile for material of this kind in the winter-time, and considered it the best season for their study. Under date of January 18, 1811, he writes to his friend, Dr. Baldwin: "For Mosses, the present season is best. They are best distinguished when the operculum is ready to fall and the peristoma beginning to show itself. The Lichens we can often find at the fireside, and I have gathered a good number just before I put the wood in the stove or on the fire" (Darlington's "Reliquiæ Baldwinianæ," p. 26). But to enjoy such plants and discern their beauties, to learn some of the lessons they may teach, it is not necessary to be a bryologist or lichenologist, or be called by any such hard names, or even be skilled in the use of the compound microscope, though this instrument is indispensable if one would go very far.

The Reindeer Mosses (*Cladonia rangiferina* and allied species) here take to the sand as readily as in rocky regions they do to the rocks. The shapely clumps, usually circular in outline and with a rounded surface, resting on the bare ground, the dichotomous branching of the stems, their varied colors, pale, ashy-gray, greenish-gray, yellowish, pink and flesh-color, all please by their variety. The trunks and limbs of many of the Pines are spotted or nearly covered with the flat expansion of other Lichens, varying in shades of color, but mostly those of gray. These colors are too subdued for brightness, but harmonize well with the dark-colored bark of the Gray Pine, there being enough of contrast for good definition, and the boll of the tree, however small, when provided with the Lichens, takes on the appearance of age. Species of Usnea, with long, glaucescent stems depending from the limbs of trees, are not common as they are farther north, where they hang from the limbs in such quantities as to make the bearded trees, look venerable.

Several of the common mosses are quite noticeable in winter. In patches on the sand are the light green, or the yellowish green tufts of one of the most abundant kinds, *Ceratodon purpureus*. The cushiony tufts vary in size and shape, being as small as a coin to a foot or more across, and round, oval or irregular in shape. The fruiting-stems have already started, and in early spring the bunches will be bright with purple stems and capsules. Much like them are the tufts of Bryum, but with stems less condensed. In marked contrast with these, both for stoutness and color, are the stems of the White Moss (Leucobryum). The compact tussocks are almost white, or white tinged with green, and are very pale, spread out at the base of some sheltering tree, the soft cushions are very inviting as a place of rest in summer, but, if tried, may be found as fully saturated with water as the stems of the better-known Sphagnum, able to absorb seven or eight times their weight of water. Wherever they are, these cellular Mosses aid the trees under whose shade they grow, by helping to retain the moisture near their roots, and enriching the soil with humus when the stems decay, and thus find their rôle in the economy of nature. Large reaches in the damper grounds are carpeted with the Hair-cap Moss (*Polytrichum commune*). Its sharp, slender leaves, resembling those of the Juniper, have an evergreen look. The stems are tall for a Moss, sometimes nearly a foot in height, and in walking through the soft beds one sinks into them ankle-deep. Another pretty moss growing in loose patches of considerable extent in the partial shade

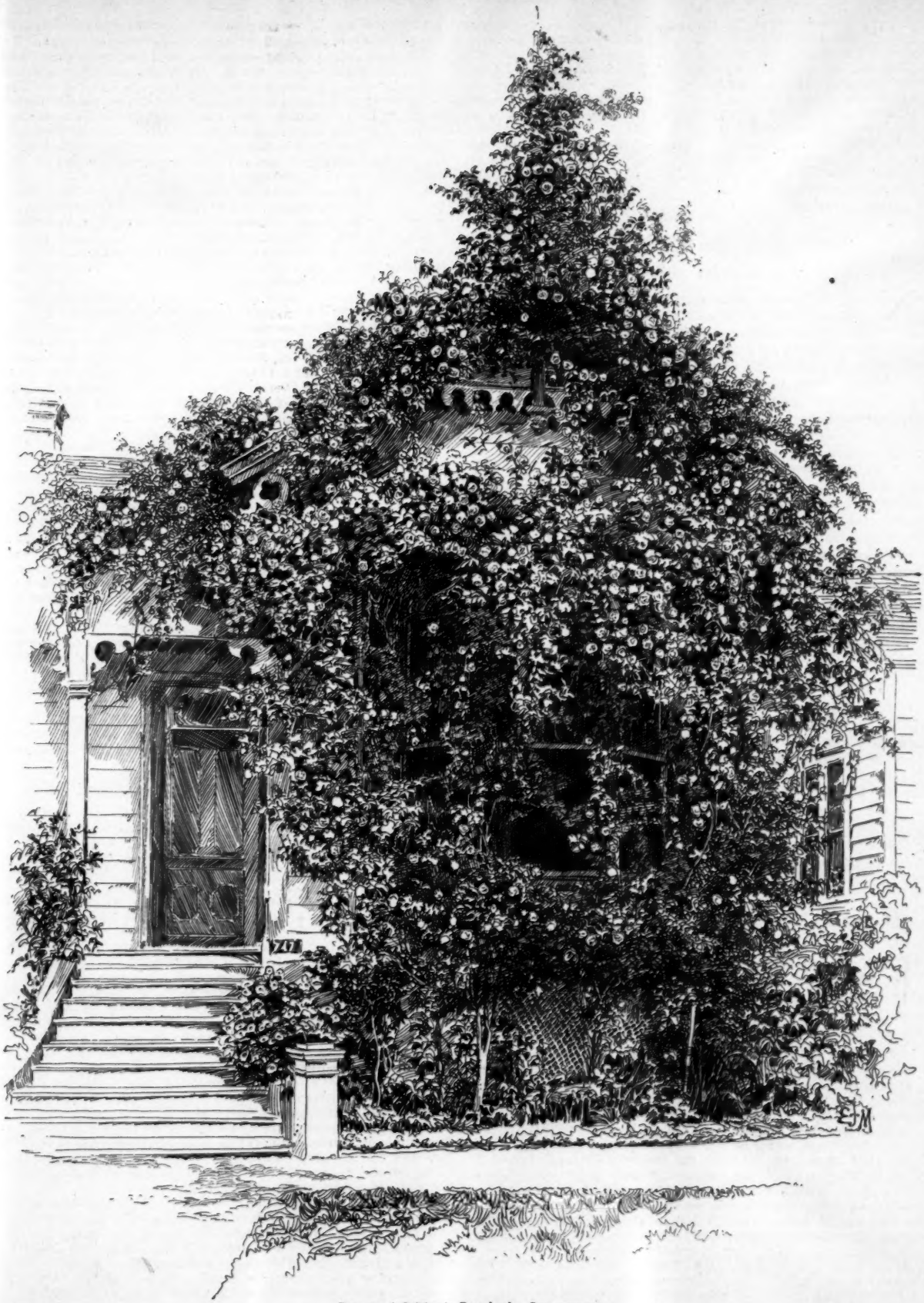

Fig. 41.—A California Rose-bush.—See page 231.

of trees is worthy of notice for the effect its peculiar coloration has on the sandy ground. It is the *Thelia Leseurii*, of Sullivant. The round and closely leaved stems are barely an inch high, and of a glaucous-green hue, contrasting well with the surrounding sands. The leaves are beautiful objects when examined under a low power of the microscope, being thickly studded with lobed or star-shaped papillæ, which seem to affect the light they reflect, and contribute to the charm they have when seen in masses. I find this Moss nowhere except in the dry sands. It is assigned a range in our literature on Mosses from New Jersey south along the Atlantic, and in the southern states, but is not uncommon in the Pine Barrens here.

Englewood, Chicago. *E. J. Hill.*

New or Little Known Plants.

Clematis connata.

NO figure has yet appeared apparently of this handsome Indian Clematis, which produced flowers at the Arnold Arboretum at the end of October of last year, from a plant sent here three years before from the Royal Gardens at Kew under the name of *Clematis Japonica*.

Clematis connata * (see p. 235) is a stout woody climber, with ample long-petioled leaves composed of three to five remote leaflets, which are three or four inches long, broadly ovate, cordate by a broad deep sinus, coarsely and irregularly serrate, or sometimes slightly three-lobed and borne on stout petiolules one and a half to two inches long; they are dark green on the two surfaces, with five principal veins and prominent reticulated veinlets. The flowers are produced in many-flowered panicles, and are campanulate, an inch long, and clear light yellow in color. The sepals are oblong, acute at the apex, pubescent on the outer and tomentose on the inner surface, and reflexed above the middle when the flower is expanded. The filaments are linear, and are coated with long silky light hairs. The fruit, which has not been produced here, is described as "silky pubescent."

Clematis connata is a native of the temperate Himalayas from Hazara to Sikkim, at elevations varying from 4,000 to 10,000 feet above the sea-level. The stems suffer here in winter, and are generally killed back to the ground. This, perhaps, accounts for its flowering so late in the season (October 27th), a peculiarity which deprives this species of much value as a garden plant in New England. It is, however, a rampant-growing plant with high-climbing stems, large bold foliage and beautiful flowers; and in regions of longer summers and warmer autumns it will doubtless prove a desirable addition to the plants of its class, certainly well worth experimenting with in some parts of the middle and southern states. *C. S. S.*

Cultural Department.

Cinerarias.

THE Cinerarias at the gardens of Dr. C. E. Weld, Brookline, Massachusetts, this spring, were probably the best, taken altogether, which have ever been seen in this country. In a late number of the *American Florist* Dr. Weld's gardener, Mr. Kenneth Finlayson, describes his method of cultivating these plants, the main portion of which we herewith reproduce:

My experience with Cinerarias, especially with those sown early, say any time in June, and for early-flowering purposes, is that they require more care than most kinds of plants to pull them through the hot months of summer. It is a well-known fact that Cinerarias are very impatient of strong sunlight, such as we get here in the months of June, July and most of August, and the prime difficulty is in providing a temperature which suits them. My method is simply to shade the glass with a thin coating of white paint, and over this, on hot, bright days, I put a lattice shading. These lattice shades are made to fit over our sash (ordinary cold frame, or six by three feet). The bars run horizontally instead of crossing each other; they are one inch wide and a quarter of an inch thick, the space between each bar being a trifle over half an inch; the frames on which the bars are nailed are one inch square.

These shades I consider the best of all when shade is necessary, for the reason that they are movable, in the first place, and put on when really needed, and secondly, because they keep the glass cooler than any paint or canvas shading will do, thereby giving, as near as possible, the conditions most favorable to plants needing a shade.

I further lower the temperature by raising the sash at both ends by wooden blocks, cut longer than they are wide, and wider than they are thick, so that one block will raise the sash to three different heights, as necessary.

Syringing overhead in the morning and afternoon of hot, dry days is very beneficial to the plants under consideration.

Greenfly attacks these plants at all stages of their existence, but are easily kept under by fumigation. When in frames outside I strew tobacco-stems all round the pots in which the plants are growing, and find no difficulty in keeping them clean in that way. In the greenhouse I seldom have to resort to any remedy for these pests, as they do not attack them much. To some this may seem strange, but the reason is quite plain, and nothing more or less, in my opinion, than that the Cinerarias are kept in a temperature admirably suited to them, but less congenial to the greenfly, namely, forty and forty-two degrees Fahrenheit at night.

The soil I use for the Cineraria in the early stages consists of one-half leaf-mold and one-half good turfy loam, with a liberal dash of sharp clean sand added. At each successive potting the leaf-mold is withheld partly and the loam increased proportionately. The final potting soil consists of one-fifth leaf-mold, one-fifth good rotten cow-manure, the remaining three-fifths turfy loam, very little sand, a liberal dash of fine crushed bones.

The stimulating begins when the pots in which they are to flower are well filled with roots; cow-manure, liquid, I use frequently, but chiefly guano and soot in equal parts mixed. I put a large handful of the latter in a six-gallon can of water and stir well with a stick, to incorporate the stimulating ingredients in the water before using. I apply this dose once or twice a week, as the weather demands—that is, if the weather should be bright there is more demand on the water-pot than there would be on cloudy days, therefore the stimulating must be regulated accordingly.

I use guano alone on almost every kind of plants, and on gross feeders, like Cinerarias, Calceolarias and Chrysanthemums, I use it in stronger solutions than do most cultivators.

Odontoglossum coronarium and O. brevifolium.

GREAT confusion has always prevailed among Orchid growers in respect to these two species of Odontoglossum. From the descriptions which have from time to time appeared in horticultural journals, it is evident that but one is referred to under both names—sometimes *O. brevifolium*, sometimes *O. coronarium*. This being the season of flowering, it will not be inappropriate to point out the differences between the two species, and to show that the plant, carelessly designated under both names, is in reality the true *O. coronarium*, as described by Lindley in his "Folia Orchidacea." How the confusion arose it is difficult to say. *O. brevifolium* was discovered about ten years before *O. coronarium*, but does not seem to have been successfully grown in Europe, and it is possible that the latter species, when introduced, was, in the first place, thought to be the true *O. brevifolium*, and was launched into commerce as such.

To afford some means of distinguishing the two species, which certainly appear to be closely related, it may be as well to state that *O. brevifolium*, according to Lindley's description in "Plantæ Hartwegianæ" (1839, p. 152), has ovate oblong compressed pseudo-bulbs, surmounted by a single leaf; the leaves are two inches broad, and sometimes not much longer; the individual flowers are an inch and a half or more in diameter, and eleven or twelve are borne on a drooping raceme, being apparently purple in color. This species was collected for the first time, with many other Orchids, by Theodor Hartweg, who was dispatched to South America, in 1836, by the Royal Horticultural Society of England, in search of new and rare plants. Dried specimens and plants were sent to England, but, beyond the botanical description recorded in "Plantæ Hartwegianæ," nothing has ever since been heard of them, except when the name has been misapplied to *O. coronarium*, which has flowered several times, and has been

*I. *Clematis connata*, De Candolle, "Prod." i., 4.—Wallich, "Cat.," 4679.—Hooker f. & Thomas, "Fl. Ind.," 11; "Fl. Brit. Ind.," i., 6.
C. venosa, Royle, "Ill.," 51.
C. amplexicaulis, *C. velutina*, *C. gracilis*, Edgeworth, *Trans. Linn. Soc.*, xx., 27.

Fig. 42.—Clematis connata.—See page 234.

figured in the *Illustration Horticole* (1874, t. 170) and the *Orchid Album* (t. 27) unfortunately under the name of *O. brevifolium* in both works.

The distinguishing features of *O. coronarium* may be described as follows. The plant has a creeping rhizome, about as thick again as an ordinary lead-pencil, emitting thick, fleshy roots from the lower surface. Numerous pale brown scales are on the rhizome, and these gradually become larger and more foliaceous in character as they approach the base of the pseudo-bulbs, which are encased by some of them, and

are produced, one year after another, at intervals of two or three inches. The pseudo-bulbs are ovoid, compressed, with edges more or less acute, and are terminated by a single leathery, elliptic, oblong leaf, which varies from six to twelve inches in length, and is about two or three inches wide. The stout, erect scapes are produced from the base of the pseudo-bulb, and are from twelve to fourteen inches high, often carrying as many as eighteen or twenty large flowers on the upper portion. The lower portion of the scape is clothed with large, pale-brown, leafy bracts, the outer surface of which is spotted with purplish red, as is also the epidermis of the scape itself. The flowers appear in March and April, and each individual, borne on a pedicel about two inches long, would occupy as much space as a circle with a diameter of two inches and a half. The roundish petals and oblong-clawed petals are of a deep glossy brown—as if the surface were varnished—with a narrow undulated margin of clear yellow, which is very attractive. The base of the petals is creamy yellow, blotched with purple brown. In comparison with the sepals and petals the lip is rather small; it has an obcordate emarginate blade, narrowed toward the base, where it widens out into a small lobe on either side, having a three-toothed crest in the centre. The color is clear, bright yellow, with a forked stain of orange-yellow at the base, in front of the crest. The white column has its "wings" decorated with purple spots.

It must be admitted that, at first sight, the original botanical description of *O. brevifolium* would do very well for what is known to be *O. coronarium*, especially when Lindley adds what would seem to be an emphasizing remark, "flores magintudine et facie Oncidii crispii." By a stretch of imagination the same might be said of *O. coronarium*. But it is important to point out that *O. brevifolium* is described as having leaves often not much longer than two inches, and as carrying its flowers on drooping scapes, while it is well known that the leaves of *O. coronarium* are much longer than two inches, and that its scapes are erect. For ordinary purposes these two particular points should be enough to enable any one to distinguish between the two species, although there are other points of difference in the structure of the flowers.

O. coronarium grows wild in the northern part of the United States of Colombia. It was first discovered by Funck and Schlim in 1847, in the vicinity of Ocana, at altitudes varying from 7,000 to 9,000 feet above the level of the sea, and it is to the latter traveler we are indebted for having first dispatched living plants to Europe—to the nurseries of M. Linden, of Brussels.

Although one of the finest Odontoglossums in cultivation, it is very seldom seen in a good condition. There is always a certain amount of difficulty about its culture, and this being recognized, it is possible that many growers make matters worse by being too careful with it, coddling it in fact, an operation seldom successful. There are some, however, who experience no difficulty in growing this species well, and one of the finest specimens I have seen in flower was grown in the collection of Mr. R. N. Dale, of Bromborough Hall, Cheshire. It was exhibited at a recent meeting of the Royal Horticultural Society, but was first shown on May 1st, 1872, by M. Linden, and obtained a first-class certificate under the erroneous name of *O. brevifolium*.

Owing to what may be called the traveling propensities of the pseudo-bulbs (the production or evolution of which is analogous to that of the common Solomon's Seal), it is not possible to restrain the growth of this plant within the bounds of a pot in the usual way. Some other means must be adopted to suit its peculiarity, and one of the best is to fix the rhizome to a teak raft, having rough peat and sphagnum moss to grow in; the raft may then be stood in a pot filled with large clean crocks, which may be covered over with fresh moss to obliterate the otherwise unsightly appearance. *O. coronarium* will thus thrive in a moderately cool house, with plenty of light and air, and copious supplies of water, with frequent syringings during warm weather and the period of growth.

Isleworth, London, W. *J. Weathers.*

Æschynanthus.

THESE showy epiphytal plants are admirable for baskets in the conservatory. Being natives of India and the Indian islands, they require a high temperature and moist atmosphere. They are generally of a scandent habit and should be allowed to droop over the sides of hanging baskets. A mixture of fibrous peat, sphagnum moss, a little loam and lumps of charcoal makes the proper soil for them, and should have a liberal supply of water when growing, both at the roots and over the foliage. The orange or scarlet flowers are produced in both terminal umbels and from the leaf-axils.

A. cordifolius is a very free-flowering species, with dark green heart-shaped leaves. The flowers are in clusters, deep red striped with black, the inside of tube being orange. The variety is one of the best summer bloomers.

A. speciosus is more erect in growth, and bears very freely large fascicles of erect, long-tubed flowers of rich orange-yellow, with black markings.

A. grandiflorus bears large deep crimson and orange flowers, and *A. Lobbianus* rich scarlet flowers.

A. splendidus is a garden hybrid of very easy cultivation. The flowers remain a long time in perfection. The leaves are long, lanceolate and of a very light green color. The flowers are large, bright scarlet, spotted with black on the edges.

There are many other varieties, but all have the same general characteristics, and they are among the most beautiful summer-flowering stove-plants in cultivation.

Maywood, N. J. *James P. Taplin.*

Dahlias.

THE *Journal of Horticulture* gives, in a late number, some valuable statistics showing the relative positions of the best-known varieties of the Dahlia as revealed by their appearance at exhibitions in England in eight years—*i. e.*, from 1883 to 1890. Here are the first twelve in each section in the order of their rank:

Show Dahlias.—Mrs. Gladstone, pale blush; Harry Keith, rosy purple; W. Rawlings, crimson-purple; J. Cocker, purple; Hon. Mrs. P. Wyndham, pale yellow and rose; Henry Walton, pale yellow and scarlet; R. T. Rawlings, clear yellow; Mrs. W. Slack, blush white and purple; Colonist, chocolate and fawn; Maud Fellowes, pale pink and purple; Goldfinder, yellow and red; Mrs. Langtry, cream and crimson. The premier position has been held by Mrs. Gladstone, which is by far the best of all show Dahlias, five years in succession.

Fancy Dahlias.—Mrs. Saunders, yellow and white; Rev. J. B. M. Camm, yellow and red; Goethe, yellow, red and white; Chorister, fawn and crimson; Duchess of Albany, orange and crimson; Flora Wyatt, orange and red; Henry Eckford, yellow and red; Mrs. N. Halls, scarlet and white; Peacock, maroon and white; G. Barnes, lilac and crimson; M. Campbell, buff and crimson; Hugh Austin, orange and red.

In the following short lists the varieties are arranged according to the total number of times they were staged in competition at the last two exhibitions of the National Dahlia Society:

Pompon.—E. F. Junker, White Aster (Guiding Star), Darkness, Favorite, Gem, Rosalie, Isabel, Golden Gem, Lady Blanche, Grace, Little Duchess, Whisper.

Cactus and Decorative.—Mrs. Hawkins, Empress of India, Panthea, Amphion, Juarezii, Constance, Charming Bride, Cochineal, Henry Patrick, William Darvil, Zulu and Honoria.

Single.—Amos Perry, Miss Henshaw, Duchess of Westminster, Mrs. B. Coninck, W. C. Harvey, Cetewayo, Duchess of Albany, Formosa, Hugo, Marion Hood, Miss Ramsbottom, Miss Roberts.

Hardy Narcissus.

THE Narcissus season is now closing in, and, so far as one can judge at present, has been a complete success. Apart from the newer varieties tried this year for the first time, there are several other points worth recording. It has been fairly tested and proved here that Irish-grown Narcissus are better ripened, and, in consequence, flower better than Holland-grown bulbs. The bulbs received from Ireland were not remarkable for size, but from most of them two flowers, and from many three flowers, were produced, and good flowers, too. This fact may be of use to those who force Narcissus largely, for complaints are common this year of the flowering of bulbs grown in Holland. As to the covering of late-planted bulbs, as heretofore advised, one point should have been emphasized more strongly, which is, that after planting it is absolutely necessary where field-mice abound, as they do here, to allow the frost to penetrate to the depth of two inches in the soil. This will keep the mice above ground, otherwise the Narcissus-bed would be a perfect paradise for them, with the covering of dry leaves to nest in.

One of the best of newer kinds tried this year is *N. bicolor præcox*. This is in flower with the earliest kinds, almost two weeks before *N. bicolor Horsfieldii*, and in shape and color is almost identical except that it is smaller; but one cannot have too many bicolored varieties, especially when they are as good as Grandee or Grandis, which is equal in every respect to

Horsefield's variety, and the one bulb gave us three perfect flowers. The perianth is pure white with a pale yellow trumpet, and the flower is of good substance. I had always thought that Empress and Emperor were tender and hard to keep, but with us they are the most vigorous, and the size and substance of their flowers are unsurpassed. Duchess de Brabant is one of the Eucharis-flowered section and is known as pure white, but there is a tinge of creamy yellow in the flowers, which are two or three on a stem. This is a very pretty variety, dwarf, and useful when cut. Of the Poet's Narcissus the earliest is the variety Angustifolius. It flowered ten days before Ornatus, the well-known early-forcing kind, and is equally as good in its way. The true variety, Pœtarum, is distinct, for, instead of the centre being margined with red, it is wholly of a deep orange-scarlet or saffron. We received a lot of other bulbs under this name which were nothing more than the *N. pœticus*, which is easily distinguished by the coloring of the cup.

Ard Righ, or Irish King, is a very early Trumpet variety, and forces well, and makes a better plant for this purpose than Trumpet Major. Countess of Annesley, also a Trumpet variety, is equal to Golden Spur, and very desirable. It was found in an old Irish garden, as were also many more charming kinds, where they have been hidden for years past, but have been hunted up since the development of what may be considered almost a craze for these flowers. Some of the newer sorts certificated at the London Conference last year command prices which testify to the demand for novelties of this sort among wealthy amateurs. Twenty-five dollars is the modest sum asked for one bulb, and if the flower is as good as described it may be as many years before it will be cheap or common; but this is an exceptional case. Good showy kinds can now be purchased of most dealers in fall, and even the cheapest are good to commence with, and then, again, some of the more expensive sorts are really cheap, they increase so rapidly. Sir Watkin, for instance, is one of the most profitable kinds ever introduced; where one bulb is planted three may be dug the following year, it multiplies so quickly by offsets. The depth at which to plant has been, and is still, a vexed question both here and abroad. Mr. Gerard takes exception to the depth recommended by me, and practiced very successfully in his own locality and in this, but the difference lies entirely in the nature of the soil, which with him is a red clay, while those with which I have had to deal have been of a sandy or gravelly nature, warm and dry in summer, and porous in winter. Had I his soil to deal with it would be necessary, perhaps, to plant differently and to leave the beds bare during summer, but here even the more delicate and even tender kinds do well under the treatment I have described in these columns.

European catalogues often add in their descriptions of Narcissus the dates at which they may be expected to bloom in the open ground. It need hardly be said that this is not of any use to us here, as when spring opens a week of difference there may become something less than a day here, but perhaps if they were grown in pots in cold frames there would be a greater interval between the kinds. Pot-culture, however, is scarcely to be recommended, as even when well grown in pots the plants become so drawn out of all character that it is very difficult to distinguish the varieties. Such was the case at the spring show of the Massachusetts Horticultural Society, and the same may be said of nearly all hardy plants, they lose one of their special charms, their hardiness.

S. Lancaster, Mass. *E. O. Orpet.*

Scilla hyacinthoides, after being grown in gardens some 200 years, would scarcely seem to need an introduction, yet as the Scilla season ends with its blooming in May, perhaps a word as to its value and beauty may cause it to be planted in places where it is now unknown. The white soft bulbs are entirely hardy, and increase rapidly, throwing up in the spring numerous long, narrow, prostrate leaves, and at this season a radical stem furnished with numerous small bell-shaped flowers. In the type these are light blue, but there are also white and rosy forms, both of which are attractive. The flower-stems are some six inches long and useful for cutting.

Trollius Europæus was one of the last hardy plants to bloom in November, and now the same plants are showing their beautiful golden globes. Very satisfactory yellows are their flowers—light yellows to orange in clear fine tones. These Globe-flowers seem of undoubted hardiness, and prefer rather damp places; in such locations they grow vigorously.

Aquilegia flabellata, the dwarf Japanese species, proves the earliest to bloom, leading *A. Sibirica*, and showing flower in April. It is scarcely a foot high and has short-spurred white flowers slightly shaded with violet. The other species and hybrids are rapidly developing and enlivening the borders with their gracefully poised flowers. Either for the border or for naturalizing in wild places there are few more satisfactory and enjoyable flowers than the Columbines, and few plants with a greater range of color and form. Perhaps there are rather too many purples, but on the whole the colors are very attractive. The confirmed hardy plantsman has his tradition that only the true species of Columbines are worth growing. 'Tis true that he is somewhat doubtful as to what may be the genuine type of some species, but he is sternly loyal to the principle. But those who simply enjoy beauty when they find it will be apt to find pleasure in the double and twisted hybrids which spring up through the garden from self-sown seed. The varieties of Columbines are endless since it is very difficult to prevent their crossing. Reliable seeds may be had of some species, however, and it is well to start with a selection of these. A good selection would be, say, *A. cærulea*, *A. chrysantha*, *A. alba grandiflora*, *A. truncata*, *A. glandulosa*, and *A. Canadensis*. It adds to the minor pleasures of the garden to grow the flowers of sentiment, and there seems to be some of this attached to the last-named species, which is our common wood Columbine. I notice that my friends who are old enough or frank enough not to be ashamed of emotion usually pause pensively at this variety, which leads me to infer that in days gone by a great many wild Columbines have been gathered in pleasant company.

Elizabeth, N. J. *J. N. G.*

Begonia semperflorens.—I have been much interested in noticing the hardy character of this Begonia for the past two seasons. On an elevated border, close under the south front of a long piazza in Raleigh, is a row of these Begonias. They are covered in the autumn with rough manure, and in the spring they start up again in full strength. I was at first inclined to think they came from seed, and some may do so, but I find that the fleshy bases of the stems survive. These plants are not tuberous, but the bases of the stems are stout, and are completely protected from our light frosts by the sheltered position in the dry border with the added cover of manure. During each summer the plants grow about two feet high, completely filling the open space between the ground and the floor of the piazza, and they are continually covered with bloom. I have been accustomed to see this Begonia growing as a weed, from seed, about old greenhouses, but had no idea before of its ability to survive out-of-doors.

The Satsuma Orange.—Last spring we planted on an open and exposed hill-top, at the North Carolina Experiment Station, two trees of the Japanese seedless Orange, known as the Satsuma. These small trees are grafted on the *Citrus trifoliata*. One of them was very puny and weak all summer, and we were not surprised to find that it lost its foliage and some wood. The other one did not lose a leaf, though no protection was given it. It is now making a firm new growth, and is in bloom. It seems probable, therefore, that we have here a sweet orange that can be grown a long way beyond the "Orange belt." The lowest temperature noted at the signal station in Raleigh during the past winter was, we believe, twenty-one degrees above zero; but these plants are on an exposed hill-top, fifty feet or more above the city, and must have had several degrees more of frost at times.

Celery-plants.—Celery-plants should be bought in May from those who make a specialty of growing them for sale on a large scale. At thinning time the young plants may be procured for one-third the price asked for them at the regular planting season, and by transplanting them two inches apart each way in a rich border, or, what is better, in a cold frame where a shade can be put over them, fine plants, in the best possible condition, are conveniently at hand when planting time comes. When only a moderate number of plants are needed, it is better to buy them in this way than to raise them from seed.

Raleigh, N. C. *W. F. Massey.*

The Forest.

Redwood Timber.

SOUTH of San Francisco Bay the only Redwood forest of any extent is that of the Santa Cruz Mountains. Compared with the northern belt this forest is small. Two railroads tap it, one piercing it through the centre. A great farming and fruit-growing community is close at hand, while much lumber goes to the cities on San Francisco Bay. With this demand it is a question of no great length of time when this forest will disappear.

North of San Francisco the first great forest is reached at the mouth of Russian River. Here is the southern border of that great Redwood forest which extends, without a break, through Sonoma, Mendocino, Humboldt, and Del Norte Counties, narrowing all the time until it ceases near the Oregon line. On the Russian River were some of the finest Redwoods on the coast. Accurate figures of the yield of Redwood forest per acre are hard to obtain, but here, at Guerneville, Mr. Guerne, the principal mill-owner, cut 24,000,000 feet of Redwood lumber, of first and second quality, from 160 acres, an average actual output of 150,000 board feet per acre. Mr. Guerne paid $2.50 per 1,000 stumpage, or $60,000 for the 160 acres. It is probable that this is as large an amount of redwood as has ever been cut on an equal area. Even at Guerneville, famous as it was for fine timber, there were not over 500 acres of timber approaching this productiveness, while of the Redwood lands remaining uncut now, such quarter sections as will yield 50,000 board feet per acre are considered exceptionally good.

North of the Russian River the Redwood forest widens, reaching its greatest width of twenty-two miles at a point west of Ukiah, Mendocino County. This section is one of very steep mountains and deep cañons, and nearly all of the Redwoods are on the rugged slopes, which even a good mountaineer would consider hard climbing. The river-bottoms or flats are insignificant throughout this region, and a forty-acre piece of level or nearly level land is unusual, and can only be found in narrow strips from which rise the steep, wooded hills. The streams, after a short course, at most forty or fifty miles, flow into the ocean, with deeply cut tidal estuaries. With reasonable accuracy it can be said the entire Redwood belt is included within the basins of these streams. At the mouth of nearly every considerable stream a saw-mill is located. The cutting capacity of the sixteen Mendocino County mills varies from 30,000 to 100,000 feet per day. The mill companies own Redwood lands at different portions of the river-courses. Logging is done at various places during summer, and the logs are rolled into the dry channels to await the winter floods, or, where the tide runs up a river, they are floated directly to the mill. Railroads are also built up the cañons, and make some of the mills independent of high water. These railroads are standard gauge, and from five to fifteen miles in length, and nearly every large mill company has its railroad, which is extended as the timber is cut. Spurs from the main roads are run up lateral cañons, so that the haul by oxen is shortened, and it is all down-hill.

The mills find easy shipping facilities from either a wharf, where the river has no bar, or by chutes, which are, perhaps, peculiar to this high, rock-bound coast. From some bluff a trestle-wharf is thrown to a rock adjacent to deep water, high above the surf. From the end of this wharf an inclined way slants to the deck of the vessel. This slide is upheld by a sort of derrick, and can be lowered to the vessel or raised out of the reach of the waves. The lumber is let down this chute piece by piece, a breaker at the bottom stopping the headway. A line of men stow it away. Passengers and freight are loaded or unloaded by way of these chutes. Steam schooners, of a capacity of 200,000 to 300,000 feet, do most of the carrying trade. On about 100 miles of coast-line belonging to Mendocino County there are twenty-three chutes and ports. In times of extensive railroad-building the Redwood region is the scene of a great railroad-tie industry, and millions are hewn. For this work only the best splitting trees are used, and waste is great. The ties are nearly all cut from the higher ridges and mountains, and hauled by wagon to the coast. Great quantities of the finest timber have thus been cut and half-used. Even in ordinary times no inconsiderable number of ties and posts is cut, and the ridges are cleared far in advance of the operations of the saw-mills.

Northward from Mendocino County the next lumbering centre is at Humboldt Bay, where the output of eight large saw-mills, each cutting from 40,000 to 80,000 a day, is shipped. More of the forest in this region is on flats and lighter slopes, and will average one-third heavier than the Mendocino woods. The last port from which redwood is shipped is Crescent City, near the Oregon line.

The total area of Redwood lands is about 1,450,000 acres, of which five per cent., perhaps, has been cut. The average net yield per acre of redwood under the saw is not easily arrived at, since scaling standing trees will, of course, give gross returns of yield. Such figures are of little practical value, on account of a large percentage of loss by breakage in felling and from unsound trees. This liability to loss is much larger proportionately in very heavy timber, so much so that experts dislike to figure on heavy timber. The most accurate figures I have been able to get are based on estimates made by scaling tree by tree, and rectifying the result by comparison with actual returns from the saw of timber so scaled previously. In other words, not the amount of timber standing on an acre, but the amount which can be actually taken off in merchantable grades. All figures are in board feet. It is to be remembered that, as there is no market for wood or for short lengths, the amount of waste on heavy lands is very large. The Redwood is very brittle, and often a tree shatters into short lengths when felled. By these measurements we find that a very good quality of hill-land will cut 50,000 per acre, with perhaps 35,000 as an all-around average for Redwood lands. Single acres may be scaled which will figure prodigious quantities. In one instance an acre was picked on what is known as the Montgomery tract, near Hot Springs, Mendocino County, which is a narrow creek-flat of perhaps forty acres, and considered the finest small piece in Mendocino County. On the acre selected there were forty-seven trees which would probably cut 1,500,000 feet of sawed lumber.

Not far from here a tree actually cut 49,500 feet of good lumber. At Westport a considerable area of what is considered excellent Redwood, cut 57,000 feet an acre. On Humboldt Bay as high as 250,000 an acre has been cut, but only on limited areas.

Ukiah, Cal. *Carl Purdy.*

Correspondence.

Wild Asparagus.

To the Editor of Garden and Forest:

Sir,—In a recent journey along the shores of Chesapeake Bay I observed that the wild Asparagus which is found growing along the sandy beaches of that region is used quite extensively. The young tops are collected and bunched for sale, and by some are preferred to the cultivated plants, although only the tips are soft enough to be eaten. In his "Field, Forest and Garden Botany," Gray notes that it is "spontaneous about gardens," and in the last edition of his manual it is called "frequent escape from gardens." It grows so abundantly along the western and southern shores of Maryland that it seems to justify the use of the term "naturalized." I observed it also a mile or two inland along the borders of the woods. I find a record of the use of "Sparagus" in "A Perfect Description of Virginia" (1649, p. 4). As a justification for the preference of the wild Asparagus over the cultivated plant, Pomponius, a Roman writer of the second century, says: "Duo genera asparagi, hortense et silvestre, sed incultum gratius est, quod Corrudam."

Framingham, Mass. *E. Lewis Sturtevant.*

Water in "Pot-holes."

To the Editor of Garden and Forest:

Sir,—In your column of notes, page 204, I am quoted as saying that cutting away timber causes more rapid accumulation of water in "pot-holes." What I did say was, that on denuded land there is a more rapid accumulation of water in these hollows. Cutting is not denudation, nor does denudation necessarily follow cutting. In the case observed there had been no cutting within twenty miles.

Washington, D. C. *H. B. Ayres.*

Watering Trees.

To the Editor of Garden and Forest:

Sir,—I am much interested in a large Oak-tree which we moved last autumn. The soil is very dry now, and I wish you would tell me whether the tree should be thoroughly watered and mulched. There seems to be a difference of opinion as to the benefits to be derived from watering at this season of the year.

Ayer, Mass. *E. L.*

[A tree moved last autumn, and therefore with roots which are still working imperfectly, would be greatly benefited, probably, by a thorough watering if the ground is dry, as it is in almost all parts of the country this spring. One thorough watering is better than half a dozen partial ones, however, it must be remembered. The best plan in such cases is to make a dish about the stem of the tree two or three feet wide, by drawing the loam back with a rake, and then fill this basin with water. When the water is all soaked away it can be filled again, and this can be done

two or three times, until the soil in the neighborhood of the tree is thoroughly soaked. Five or six barrels of water would not be too much for a tree fifteen or twenty feet high. After the water has all soaked away the basin should be filled by drawing the soil back, and then the surface of the ground should be thoroughly mulched with a coating of leaves, hay or grass five or six inches thick, and extending out from the trunk several feet. This mulch had best be left about the tree all summer to check evaporation from the ground. A band of straw tied round the trunk will protect it from the sun, and is often beneficial to newly transplanted trees.—ED.]

On the Names of Some North American Trees.

To the Editor of GARDEN AND FOREST:

Sir,—With respect to the Florida and West Indian "Marlberry," which Nuttall described as *Ardisia Pickeringia* ("Sylva," iii., 69, t. 102) in 1854, it appears upon late investigation that a change becomes necessary both in its generic and specific name.

The genus Ardisia, in which this plant has been maintained during the last twenty-five years, was established by Swartz ("Prodromus Flora Indiæ Occidentalis," i., 467, t. 10) in 1797, but this, it seems, must give way to Thunberg's older genus, Bladhia, established in 1781.

The first description of the Marlberry was published by Nuttall, in the *Am. Journ. Sc.* (v., 290), under the name of *Cyrilla paniculata*, in 1822; he next published it as *Pickeringia paniculata* in 1834 (*Journ. Phila. Acad. Sc.*, vii., Pt. 1, 95), and finally described and figured it ("Sylva," iii., 69, t. 102) as *Ardisia Pickeringia* in 1854.

The oldest specific name applied to this plant is therefore *paniculata*, published in 1822; but in calling Professor Sargent's attention to the desirability of resuming this name, he suggested to me the existence of an *Ardisia paniculata* published by Roxburgh ("Hortus Bengalensis," 16) in 1814, which would, of course, preclude the employment of *paniculata* for our species. A suspicion, however, that Roxburgh's name was not founded on a description, led to further investigation and the discovery that no description was published in the "Hortus Bengalensis," therefore making *paniculata* untenable for Roxburgh's plant, and open to use for our Marlberry, as Roxburgh did not properly establish *A. paniculata* until 1824 ("Flora Indica," ii., 270).

Referring our species to its oldest genus under the oldest specific term, the plant becomes *Bladhia paniculata* (Nutt.) (= *Cyrilla paniculata*, Nutt., l. c., 1822; *Pickeringia paniculata*, Nutt., l. c., 1834; *Ardisia Pickeringia*, Nutt., l. c., 1854).

Respecting the author of *Ardisia Pickeringia*, there appears to have been a difference of opinion, some citing Torrey & Gray, and others Nuttall. I believe, however, that Professor Sargent ("Census Cat. For. Trees," 100) was correct in ascribing it to Nuttall (l. c.)

The only author before this who quotes Nuttall for this combination is Cooper (Smithsonian Rep., 1858, 264) though he gives "*A. Pickeringii*, Nutt.," while Nuttall wrote "*A. Pickeringia*"; Cooper may not, however, have intended to change Nuttall's name.

But DeCandolle ("Prodr.," viii., 124), Chapman ("Fl. So. States," 277), Vasey ("Cat. For. Trees," 19), Gray ("Syn. Fl.," ii., l. 65), Hemsley ("Biol. Am. Cent.," ii., 294), all cite Torr. of Sprengel ("Syst. Veg.," ii., 268), who restored Linnæus' rey & Gray for *A. Pickeringia*, which is doubtless incorrect, as the "Flora N. A." contains, as I take it, no such announcement.

The only reference made to this species in the above work is in a note (i., 256), "*Pickeringia*, Nutt. (*Cyrilla paniculata*, Nutt.) . . . is a species of Ardisia; probably *A. coriacea*, Swartz. . . ." Certainly *A. Pickeringia* could not be properly ascribed to Torrey & Gray on this evidence, and should, therefore, not be so maintained in the synonymy of this plant as a name originating with the above authors.

Persea Carolinensis, Nees.—The synonymy of the Red Bay, a tree which occurs from Virginia to Florida and westward through the Gulf states to Texas, presents some interesting features, aside from the fact that Catesby's specific name, *Carolinensis*, so long maintained, is hardly the one which the plant should now bear.

The first description and figure of this species appears to have been published by Catesby in his "Natural History of Carolina and the Bahama Islands" (i., 63, t. 63), in 1731. But Linnæus, in subsequently studying this plant, seems to have ignored Catesby's name, for he designated it in his "Species Plantarum" (ed. i., 370, 1753) as *Laurus Borbonia*, citing Catesby's name as a synonym, a fact which is of more significance in determining that Linnæus and Catesby described the same plant, than can be drawn from the former's description (l. c.), as this diagnosis gives only in part the characters of the species. The locality given by Linnæus, "Virginia and Carolina," though circumstantial, is additional and legitimate evidence in support of the authenticity of the Linnæan name.

Writers succeeding Linnæus have, nevertheless, chosen to follow and maintain Catesby's name down to the present time, the only exception to the general agreement being in the case name in 1825, referring the plant to its present genus as *Persea Borbonia*. And in the light of present evidence, therefore, it seems advisable that Sprengel should be followed, as there can be no doubt but that the Linnæan name is sufficiently authenticated, and should, therefore, be maintained, in which case *Persea Carolinensis*, Nees, becomes *Persea Borbonia* (Linn.), Spreng.

It should be added, although unknown to me until now, that Professor Sargent had already taken up *Persea Borbonia* for the Red Bay, as he informs me, having changed last year the name in the Jesup collection of American Woods.

It is further of interest to note that the name *Laurus Carolinensis*, founded on Catesby's publication (l. c.) in 1731, and commonly placed in the synonymy of this plant, cannot be longer maintained in this position, as it antedates the Linnæan starting-point for specific names. The reference is, however, of historical interest, and may therefore be properly preserved, though in another connection. *Laurus Carolinensis*, of post-Linnæan synonymy, must take its date from the second edition of Catesby's work, published in 1754.

Forestry Division,
U. S. Department of Agriculture. *George B. Sudworth.*

Recent Publications.

A second edition of the *Catalogue of the Flowering Plants and Cryptogams*, and a list of the vertebrate animals found within about thirty miles of Hanover, New Hampshire, including a few cultivated species, has been issued by Henry G. Jesup, professor of natural history in Dartmouth College, the first edition having appeared in 1882. The region is an interesting one, embracing the mountain peaks Moosilauke and Kearsarge in New Hampshire, and Killington in Vermont. It includes several large sheets of water, and is divided by the Connecticut River. It is, therefore, a fairly representative region of northern New England, and, with the exception of the alpine plants found on the high mountains and the literal plants of the sea-coast, contains a large representation of the New England flora.

"Thirty miles south of Hanover," Mr. Jesup tells us, in his introduction, "in the towns of Charlestown, New Hampshire, and Springfield, Vermont, some trees and shrubs, so common a little further south in both of these states, have already reached their northern limit and begin to disappear, from the native woods. The Chestnut and the Shagbark Hickory are no longer abundant. The season is too short for any considerable quantity of fruit to reach perfection, and seedlings are rare. Trees of these two kinds when planted in sheltered localities may attain considerable age and size. A single Chestnut of exceptional size may be seen in Norwich, Vermont, five feet eight inches in diameter, and more than fifty years old, but it was planted where it now stands, and the chestnuts are of little value. An occasional Shagbark Hickory of moderate size may also be met with, though the Pignut Hickory is not infrequent in the woods, and the Bitternut Hickory ascends the Connecticut as far north as Wells River. The Black Birch and the Gray Birch, as well as the Pitch Pine, are rare north of Hanover and not common in its vicinity, while the Sycamore or Buttonwood is nowhere seen in a wild state. To the above may be added, as decidedly rare, the Sassafras, the Spice Bush, the Flowering Dogwood, the Red Cedar and the common Juniper, together with many other trees and shrubs that fifty miles south of Hanover may be common.

"On the other hand, as the traveler advances thirty miles northward from Hanover, another class of arborescent vegetation appears that either is not found at all southward, or at least is not abundant. Here the White Cedar becomes plentiful and very valuable, the Tamarack, or American Larch, fills the swamps, and the White Spruce occasionally appears, while the Black Spruce covers the lower mountain-tops, the Paper Birch adorns the hillsides, the Green Alder is found by

the streams and in the ravines, and the Elder has red berries more commonly than black ones."

The arrangement of genera and species and the nomenclature is that adopted in the latest edition of Gray's "Manual of the Northern States."

Notes.

The first cherries of the season arrived in New York about May 12th. They came from San Jose, California, and were retailed at $1.25 a pound.

The Earl of Gosford, a member of the British House of Lords, has purchased an entire section of land (640 acres) near Bakersfield, Kern County, California, and has begun to plant it with Grape-vines, Peaches and Pears.

A large part of the shore of the picturesque harbor of Sydney, Australia, is already laid out in parks and botanical gardens. Now it is announced that the Government, wisely intent upon preserving as far as possible the beauty of the bay, will take possession of all the islands still unoccupied and devote them to ornamental plantations.

"Perfumes," wrote Heinrich Heine, "are the feelings of flowers; and as the human heart feels most powerful emotions in the night, when it believes itself to be alone and unperceived, so also do the flowers, soft-minded, yet ashamed, appear to wait for concealing darkness, that they may give themselves wholly up to their feelings, and breathe them out in sweet odors."

Part I. of the thirteenth volume of the "Journal of the Royal Horticultural Society" has reached us. It contains papers on the Dahlia, the Grape, on Trees and Shrubs for large towns, on Chinese Primulas, on cultivated Ferns, and other subjects of great and immediate interest to horticulturists, and shows the vitality and usefulness of the Royal Society, which has never done better work than it is doing to-day.

When the votes for a "state flower" were cast by the school-children of New York a year ago the Golden-rod proved the favorite, with the Rose so close a second that another ballot, confined to these two flowers, was thought desirable. This has just been taken in fifty-three public schools; 22,945 children voted for the Rose, and 25,360 for the Golden-rod, which thus becomes the emblem of New York state.

The leaves of *Salvia triloba* are extensively used in the Levant in the preparation of a kind of tea. The plants are simply cut, dried, tied in bundles and sold on the market-place, and are found, ready for use, in every café of Greece, and even in the poorest homes. This "Athenian tea," or, as the Greeks call it, "Phaskomylia tea," is believed to be a sure preventive of colds and fevers, and is therefore universally drunk in winter weather and by sailors at sea.

"In 1873," says a writer in the *Evening Post*, "the government of Assam began to cultivate the India-rubber-tree in the humid forests of Charduar, at the foot of the Himalayas. It was found best to propagate from seedlings, which were planted in the forks of trees, and by 1885 they had reached the ground. The trees were subsequently planted in beds forty feet wide, amid the surrounding forest, which sheltered them. Last year the plantation comprised 1,106 acres, and contained 16,054 healthy plants, besides 84,000 seedlings."

In his "English Flower Garden," Mr. H. A. Bright well says: "One of the greatest ornaments to a garden is a fountain, but many fountains are curiously ineffective. A fountain is most beautiful when it leaps high into the air and you can see it against a background of green foliage. To place a fountain among low flower-beds and then to substitute small fancy jets that take the shape of a cup, or trickle over into a basin of gold-fish, or toy with a gilded ball is to do all that is possible to degrade it. The real charm of a fountain is when you come upon it in some little glassy glade of the 'pleasaunce,' where it seems as though it sought, in the strong rush of its waters, to vie with the tall boles of the forest-trees that surround it."

The *Illustrirte Gartenzeitung* of Vienna says: "White fruits are rather rare in nature, and in this country are represented almost solely by those of *Symphoricarpus racemosus*. Variations into white from the usual red, blue or yellow fruit-colors do, indeed, occur in cherries, plums, raspberries, blackberries, whortleberries, gooseberries, strawberries, tomatoes, privet-berries and other fruits; but they almost always show a tint which is not pure white, but is tinged with the original green, yellow or red. The establishment of L. Van Houtte, Senior, has, however, produced a variety of the common Elder with pure white fruit. The originators say that the plant is vigorous in habit, and bears fruit freely; that this fruit is not only pure white, but translucent like white currants, and that a delicious preserve may be made from it."

According to an account in one of our daily journals, an association of women has been formed in London for the purpose of contracting for the care of city conservatories, window-boxes, balconies and small urban gardens. "It will personally supply and superintend all orders, employing men only for the digging. Once a week one of the lady-gardeners will call to attend to the conservatories, valuable plants in rooms, etc., and leave orders for what is to be done until she comes again. People wishing to close their town homes leave their plants in the charge of the ladies. Swanley Horticultural College is to open a ladies' department, so popular is this work becoming among women, when the women will occupy a separate residence, and devote the days to theoretical and practical work."

The Secretary of the Parisian Chambre Syndicale des Horticulteurs (which may be translated Florists' Board of Trade) recently declared that many of the four hundred gardeners who supply the flower-markets of Paris have been ruined by the exceptional severity of the past winter. Fifty Rose-growers, he declares, have lost about a million francs because they could not house their plants quickly enough on the sudden advent of frost. One hundred and fifty gardeners who make a specialty of hardy flowers, such as Pansies and Gilly-flowers, have lost their entire stock; and the loss of those who furnish pot-plants, or the cut flowers of such plants, is estimated at 800,000 or 900,000 francs. About 6,000 other gardeners, living in the departments of the Seine and of the Seine-and-Oise, have likewise greatly suffered. In general the damage has been much greater than even during the famous winter of 1870-71, for then the excessive cold did not extend to the western and southern parts of the country.

"Variations of flowers," wrote Leigh Hunt, in an essay called *A Flower for your Window*, "are like variations in music, often beautiful as such, but almost always inferior to the theme on which they are founded—the original air. And the rule holds good in beds of flowers, if they be not very large, or in any other small assemblage of them; nay, the largest bed will look well, if of one beautiful color, while the most beautiful varieties may be inharmoniously mixed up. Contrast is a good thing but we should first get a good sense of the thing to be contrasted, and we shall find this preferable to the contrast if we are not rich enough to have both in due measure. We do not, in general, love and honor any one single color enough, and we are instinctively struck with a conviction to this effect when we see it abundantly set forth. The other day we saw a little garden-wall completely covered with Nasturtiums and felt how much more beautiful it was than if anything had been mixed with it, for the leaves, and the light and shade, offer variety enough. The rest is all richness and simplicity united—which is the triumph of an intense perception. Embower a cottage thickly and completely with Roses and nobody would desire the interference of another plant."

The April issue of Hooker's *Icones Plantarum*, being part third of the twenty-second volume, contains figures and descriptions of a number of plants of extraordinary interest, including a new Chinese Rubus; a Magnolia-like tree from Hong-Kong, Mangalietia, the first record that this genus is represented in China; *Eperua Jenmani*, a fine leguminous tree from British Guiana furnishing timber, and from the root a remedy for the toothache; *Ligusticum Sinense*, one of the sources of the Chinese drug known as Kao-pên; *Nyssa Sinensis*, an interesting addition to a genus known before only in North America, where several species occur, and in the Himalaya, where one is known. This Chinese Gum-tree differs from its allies in the pedicellate ovaries. *Dalbergia Hupeana*; this is the T'an-tree of the central provinces of China, and is common in Hupeh "in the flat country, and its wood, being hard and durable, is much used in making rammers for oil-presses, wheel-spokes, tool-handles, and the blocks and pulleys used on the native craft." *Buddleia officinalis*, one of the sources of the Chinese drug known as mêng-hua; it is common about Ichang. *Inula racemosa*, a very fine species from the western Himalaya and China, where it is cultivated as a drug and as a substitute for the root of *Aplotaxis auriculata*, which is so largely imported into China by way of Calcutta and Bombay from Cashmere.

BEECHAM'S PILLS

PRICE 25c. PRICE 25c.

BEECHAM'S PATENT PILLS. ST. HELENS LANCASHIRE

THE GREAT ENGLISH REMEDY.

CHEAP, PAINLESS, EFFECTUAL.

"Worth a Guinea a Box"

But Sold by all Druggists at 25 cents.

A Wonderful Medicine

FOR ALL

Bilious and Nervous Disorders

SUCH AS

Sick Headache, Constipation, Weak Stomach, Impaired Digestion, Disordered Liver, &c.

Prepared only by THOS. BEECHAM, St. Helens, Lancashire, England. B. F. ALLEN CO., Sole Agents for United States, 365 & 367 Canal St., New York, who (if your druggist does not keep them) will mail Beecham's Pills on receipt of price 25cts.—*but inquire first. Correspondents will please mention the name of the publication in which this advertisement is seen.*

ROSES FOR SUMMER BEDDING.

Teas, Hybrid Teas, Polyanthas, &c., &c.

Our collection embraces all the **old** varieties and the cream of the **new.** The plants are from 4-inch pots and are strong and healthy, and suitable for planting out as soon as danger from frost is past. Our new Catalogue of Roses, containing accurate descriptions, will be mailed **FREE** on application.

ELLWANGER & BARRY, Mt. Hope Nurseries, ROCHESTER, N. Y.

ALPINES AND SUB-ALPINES.

Herbaceous, Bog and Aquatic, Ferns, Lilies, Orchids, Vines, Shrubs, &c. Our little book of Natives, with engraving of Nurseries, tells how we grow them. 2 stamps.

GILLETT & HORSFORD, Southwick, Mass.

THE GREAT AMERICAN TEA COMPANY

CHANCE FOR ALL

To Enjoy a Cup of Perfect Tea. A TRIAL ORDER of 3½ pounds of Fine Tea, either Oolong, Japan, Imperial, Gunpowder, Young Hyson, Mixed, English Breakfast, or Sun Sun Chop, sent by mail on receipt of $1.00. Be particular and state what kind of Tea you want. Greatest inducement ever offered to get orders for our celebrated Teas, Coffees and Baking Powder. For full particulars address THE GREAT AMERICAN TEA CO. P. O. Box 289. 31 and 33 Vesey St., New York.

AMERICAN WOODS

A book on Woods, containing *actual and authentic specimens.* PREPARATIONS OF WOODS FOR MICROSCOPE AND STEREOPTICON, and WOODEN CARDS, for invitations, calling cards, etc. Send for circulars.

R. B. HOUGH, Lowville, N. Y.

Six days earlier than any variety tested at the Agricult'l Ex. Grounds at Geneva, N. Y. Color greenish white: pulp tender, sweet and delicious. The only grape that ranks first both in earliness and quality. Each vine sealed with our registered trade-mark label. Send for circulars giving further information. Agents wanted Address STEPHEN HOYT'S SONS, New Canaan, Ct.

The Gill Engraving Co.,

39 & 41 Park Place, New York.

PHOTO-ENGRAVING by all Modern Processes.

Cuts from Photographs, Pen and Ink and Crayon Drawings, Wood Cuts, Etc., by Zinc Etching, Photo-Electrotyping and Half-Tone.

BURNETT'S PERFECTLY PURE HIGHLY CONCENTRATED Standard Flavoring EXTRACTS

ABSOLUTELY PURE.

FULL MEASURE.

No cartoons to hide long-necked and panelled bottles.

Thoughtful people should read the testimonials below, from cooks of national reputation.

JOSEPH BURNETT & Co., Boston:

Gentlemen,—I have used your Extracts for years, knowing them the best to be found in the market.

MARIA PARLOA,
School of Cookery, Tremont Street.

From Professor Blot.

A good dish is often spoiled or rendered unpalatable by the use of a detestably cheap, impure and deleterious Flavoring Extract.

In answer to inquiries from the ladies of my various classes, I invariably reply that during the past two years of my lectures on cookery, "I certainly prefer those prepared by Joseph Burnett & Co., of Boston, above all others."

BURNETT'S EXTRACTS are for sale by Grocers and Druggists generally throughout the United States; also in many foreign countries.

Do not accept the poor substitutes sometimes offered, but insist upon obtaining BURNETT'S, as they are THE BEST.

"NEPONSET" WATERPROOF FLOWER POTS

For Shipping Plants.

Unbreakable. Handsome. Durable. Light. Clean. Cheap.

They insure complete protection to the roots, make a perfect pot for marketing, and effect an immense saving in cost of transportation. Cheaper to use "Neponset" Pots than to wrap with paper. Slips, Cuttings and Young Plants can be grown and marketed in the smaller sizes, saving labor of transplanting, and avoiding injury to plant.

Made in S. A. F. standard sizes.

Sole Manufacturers:

F. W. BIRD & SON, East Walpole, Mass.

Wholesale Agents:

R. & J. FARQUHAR & CO.,
So. Market St., Boston, Mass.

AUGUST RÖLKER & SON,
Station E, New York City.

Write for Samples and Circulars.

Weight of 1,000 2¼ in. pots (including crate)	..	20 lbs.
" " " 2½ " " " "	..	23 "
" " " 3 " " " "	..	33 "
" " " 3½ " " " "	..	44 "
" " " 4 " " " "	..	38 "

A GREAT INVENTION.

GLASS

For GREENHOUSES, GRAPERIES, CONSERVATORIES, HOTHOUSES AND HOTBEDS.

VANHORNE, GRIFFEN & CO.

Importers of French Glass. Also American Window Glass.

Special Importation for Rose-house purposes.

131, 133, 135 & 137 FRANKLIN ST., NEW YORK CITY.

HITCHINGS & CO.

Established 1844.

Greenhouse Heating

AND

VENTILATING.

Base-Burning Water Heaters for Small Conservatories.

Corrugated Fire Box Boilers for large Greenhouses

Horticultural Architecture

AND BUILDING.

Greenhouses, Conservatories, Palm Houses, etc.

Erected complete, or the Structural Iron work shipped ready for erection, with plans, details, and full instructions to enable the local builder to erect same.

HITCHINGS & CO.,

No. 233 Mercer Street, New York.

Send Four Cents postage for Illustrated Catalogue.

Parsons & Sons Co.

LIMITED.

Kissena Nurseries, Flushing, N. Y.,

offer

Rhododendrons

of American grown hardy sorts.

Hardy Azaleas.

For other rare and old plants, see Catalogue.

GREENHOUSES, PALM-HOUSES, CONSERVATORIES.

IRON CONSTRUCTION,

PATENT IMPERISHABLE PUTTYLESS GLAZING.

Under this construction, Greenhouses are free from the constant annoyance of broken glass, frequent painting, and rapid decay. Over 40,000 square feet of glass under construction at present time. Send stamp for postage of Catalogues Circulars, &c., to

JOSEPHUS PLENTY,

HORTICULTURAL AND SKYLIGHT WORKS.

New York Office: 145 Liberty St.

Mail Office & Works: 148-156 Randolph Ave., Jersey City.

PANSIES ONLY.

The grandest Collection ever offered, including all the Latest Novelties. Our Seed is Warranted to be Fresh, Pure and Strictly First-class. Send for new Price-list.

ALBERT BENZ, Douglaston, N. Y.

Arnold, Constable & Co.

CARPETS.

Scotch Axminsters,

Royal Wiltons, Lowell Brussels.

PERSIAN AND ORIENTAL RUGS,

Axminster and Aubusson Whole Carpets.

Designs specially prepared.

JAPANESE AND CHINA MATTINGS

in large variety of novel styles.

UPHOLSTERY.

Satin Damask, Printed Dimitys,

INDIA SILK AND COTTON FABRICS

In artistic coloring for draperies.

Tapestry Chair Seats and Backs.

LACE CURTAINS.

Hair Mattresses, Feather Pillows and Bolsters.

Broadway & 19th st.

NEW YORK.

V. H. HALLOCK & SON wish to call the attention of the trade and general public to their exceedingly large stocks of

BULBOUS, TUBEROUS AND HARDY HERBACEOUS PLANTS,

and beg to solicit a trial order.

GLADIOLI, extra choice named sorts, in over 1,500 varieties.

" **SNOW WHITE (NEW).** The best White Gladoli for forcing. Our mixtures of the above strains are the finest in cultivation.

IRIS KEMPFERII, Double and Single. Over 500 named varieties. The largest and finest stock in this country.

IRIS GERMANICA. A very large collection of all the finest sorts.

IRIS SIBERICA. One of the most showy of all Irises, color Royal Purple.

LILIES. Our Lily Farm is replete with over 500 varieties of all the most choice and latest importations from Japan and other countries.

We are also very large importers of **HYACINTHS, TULIPS, CROCUS, Etc.,** commonly known as Dutch Bulbs for Fall Planting and Spring display. In our Herbaceous Grounds we have a large and varied Collection of **HARDY PLANTS,** which for a whole season flowering cannot be surpassed. The best stock of **Herbaceous Phloxes** extant.

DAHLIAS. We grow over three acres, and our stock comprises nearly 1,000 varieties, the cream of this country and also of English growers. Catalogues and Special Prices on application to

V. H. HALLOCK & SON,

BULB GROWERS AND EXPORTERS,

QUEENS, N. Y.

ERIE RAILWAY.

The Picturesque Route of America. Via Niagara Falls or Chautauqua Lake. An Enchanting Panorama of Mountains, Forests and Streams.

SOLID TRAINS between New York and Chicago. No change of cars. VESTIBULED LIMITED (strictly first-class), without extra charge for fast time and superior service.

W. C RINEARSON, General Passenger Agent.

PAINT YOUR ROOFS WITH DIXON'S SILICA GRAPHITE PAINT

Water will run from it pure and clean. It covers double the surface of any other paint, and will *last four or five times longer.* Equally useful for any iron work. Send for circulars. JOS. DIXON CRUCIBLE CO., Jersey City, N. J.

THE THERMOSTATIC INCUBATOR The most reliable machine made. Fully guaranteed. Used by leading Poultry raisers. *If you wish to know all about this really first-class Incubator send for circular, free.* Send for Warner's catalogue of **Brooders and Hot Water Heaters. JAS. E. WARNER, 19 Park Place, New York City.**

N.Y. Engraving and Printing Co.

PHOTO-PROCESSES.

ENGRAVED PLATES FOR ALL ILLUSTRATIVE PURPOSES.

320-322 Pearl Street,

NEW YORK.

USE HAMMOND'S SLUG-SHOT

TO DESTROY

Currant Worms, Melon Bugs, Curculio, Rose Lice, Cabbage Worms, Potato Bugs, etc.

Use lightly for Insects; freely for Fertilizer.

TESTED FOR TWELVE YEARS. Safe to Use.

SOLD BY ALL THE LIVE SEED DEALERS IN AMERICA.

COPPER COMPOUND kills Rot, Blight and Mildew; diluted makes the Bordeaux Mixture.

THRIP JUICE, diluted 400 times with water, **kills Codling Moth, Elm Tree Beetle, Gypsy Moth Larva, etc.** These two, combined in one application, make the surest destructive preparation to fungus and insects that can be found on the face of the earth. For pamphlet, address

B. HAMMOND, Fishkill-on-Hudson, N. Y.